

XH-KG55B Temperature Controller

USER'S MANUAL

— OVERVIEW

XH-KG55B is a intelligent temperature controller, designed by object's characteristics, controlling programmed temperature according to process curve. It simplifies system operation of KG66 and decreases output interface, to going to smaller and more intelligent direction. And it is strong versatile, fit for controlled temperature which is less than 150°C, i.e. washing mechanism and electric heater.

二 MAIN SPECIFICATIONS

2.1 I/O interfaces

1 input channel for temperature measurement

3 output channels with switching variable of which:

2 heating controls

1 call control

relay output: AC 240V/3A

2.2 Temperature control specifications

temperature measurement component:

Pt100 platinum thermo-resistor

temperature measurement range: 000.0℃ ~ 153.0℃

temperature control range: 030.0℃ ~ 150.0℃

temperature control accuracy: stable error $\leq \pm 1.2^{\circ}\text{C}$

2.3 Programmable Functions

programmable process No. : (0~9), total 10

Programmable process steps of each process is ten.

Each step is be set object temperature, gradient and isotherm time.

2.4 Temperature Control Method:

optimize self-adaptive method

2.5 Temperature parameters setting range

object temperature: (030.0 ~ 150.0) °C

gradient: (0.2 ~ 9.9) °C/min

time of isothermic phase: (00 ~ 99) min

2.6 Programming Checkout Functions

Press “△” key to check whether setting parameters correspond with parameters in the process flowchart or not.

2.7 Safekeeping

(1) Suddenly power cut off, a running controller can continually run in retrieving the old process step data after power is on again.

Reader's Card

Dear Sir,

Thank you for accepting our product.
Please fill in Reader's Card and send to us.
We'd like to give you excellent service.

✂ -----

Type of Controller	
Qty.	
Date	
Company	
Contact Person	
Tel.	
Add	
P.C.	
Advice	

Add: Building 1 Nanhai Tianan Cyber Park, Foshan Guangdong
Tel : 0757-81230666 Fax: 0757-81230666

(2) During running probe is broken, the controller calls 18 times, then it stops.

(3) When temperature is higher than 150 °C , the controller calls and automatically stops.

2.8 Power Range

AC (180~250) V、50/60HZ Power consumption ≤ 3W

2.9 Dimension of Apparatus

W (96) × H (96) × L (100) mm³

2.10 Dimension of Installation

W (92) × H (92) mm²

2.11 Work Environment

Temperature ≤ 50 °C relative humidity ≤ 90 %

≡ OPERATING GUIDE

3.1 Functional Keys

- (1) RST — When press it, "P" will flash on panel. In running state push **STOP** at first, then push **RST**.
- (2) PRG — Press it to go to programming state.
- (3) RUN — In reset state press it to display **F*L***, it means process No. & step No. After enter **F*L*** it start to run. During running press it to display process No. & step No for 3 secs.

(4) STOP — In operating state press it to pause controller.

(5) Δ — (Page up) Press it to page up data of each step in sequence and memorize parameters. And check program step by step.

(6) ∇ — (Page down) Press it to page down data of each step in sequence. And check program in negative step.

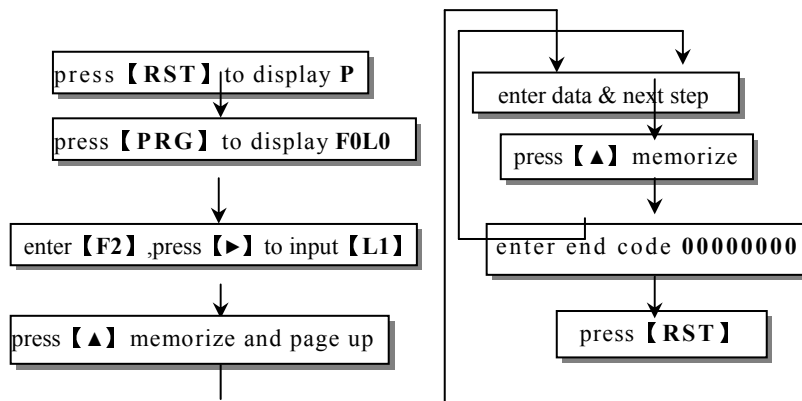
(7) “0~9” — (number) Enter decimal number 0~9.

(8) \triangleright — (shift right) Digital displaying place shifts towards right.

3. 2 Operating Flowchart

(1) program: F—process No. L—step No.

i.e. process No. : F2, step No. : L1



	Problem	Reason	Troubleshooting
operation error	Can't program.	Don't push RST or PRG key. Don't enter finish code 00000000 in programming mode.	Program again. Or turn on controller to program again.
	When controller is on, it's in isothermic phase. STOP and RST key can't be operated.	Up-gradient rate and down-gradient rate is set 00 in programming mode.	Quickly push STOP and RST key, it can return to normal state. Check error parameter and program again.
	Can't run to next step.	Set data is unsuitable, i.e., set temp is 30 °C, set time is 10 min. But actual temp is higher than 30°C in summer.	Readjust parameters.
Abnormal	Don't display.	Press STAET key of sampling dyeing machine, but keys can't run rightly. It results in wrong initial state.	Cut off power for 8-10 seconds, then power on again.

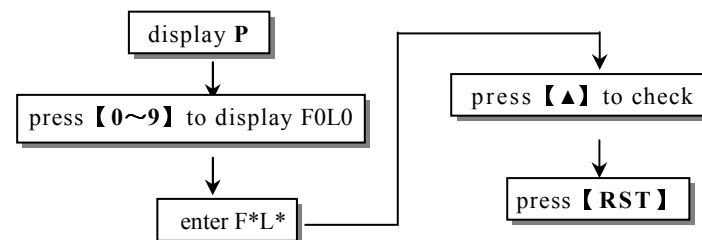
八 Service

A warranty of time for our product is one year. We provide our customers with consistent best after-sales support. If you have any problem, please don't hesitate to contact with us.

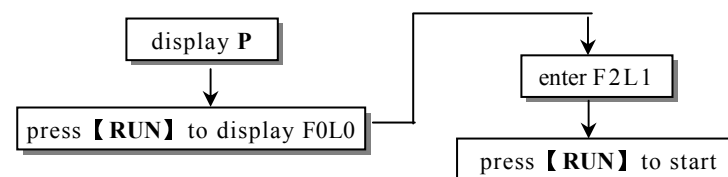
8.0 Troubleshooting

Problem		Reason	Troubleshooting
Probe Circuit	Display 000 °C or 153°C	P probe circuit is short or cut. Probe flex connected wrongly.	Check probe and lines.
	Instable temp during up-gradient phase	Joins in probe line or three-core insulating line can't be connected or bad to ground. Probe wet.	Check and connect probe line again. Blow out water in probe, then seal and fix it.
	Temp inaccurate which is up to 95°C	Water come into probe. It become vapor at high temp. Vapor influences probe.	If necessary, change new one.
Valve	Can't increase or decrease temp when controller runs, but lights is on. Output is ok.	AC contactor can't run or heated flex is burnt out..	Maintain external electric apparatus.
	Increase temp slowly	Power of heated flex is smaller.	change a new one
	Increase temp rapidly. Temp continually rise in isothermic phase	AC contactor is bad or can't run.	

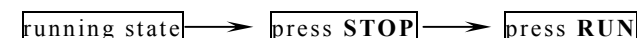
(2) Check Program:



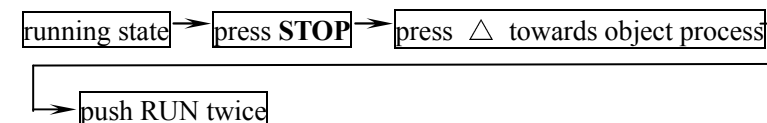
(3) Run process (F2L1):



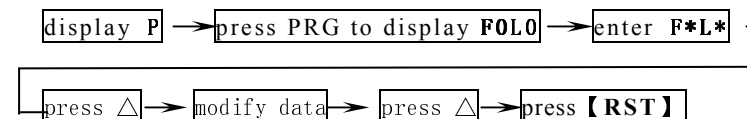
(4) Re-run process after halt



(5) Process Step Jump:



(6) Process Parameters Correction:



3. 3 Subroutine Function

(1) Running pause sub.16100000 & end sub.00000000, the controller stops and calls.

(2) Temperature correction : i.e. enter F9L9, see correction function as below,

$\begin{array}{c} \text{1 6 2} \quad \text{0 0 0 0} \quad \text{9} \\ \text{subroutine No.} \quad \text{0—positive correction} \\ \quad \quad \quad \quad \quad \text{1—negative correction} \end{array}$

press Δ to memorize
0~9: max corrected temp is 9°C

Note :

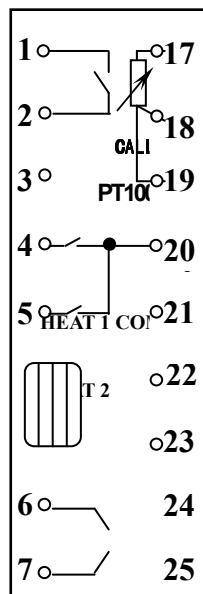
A、During running push (0~9) key to display corrected temp, i.e. +5°C display 5, -5°C display - 5.

B、If change new IC, re-set temp correction program. If needn't correct temp, please set 16200000.

C、Temperature deflection of KG55B is less than $\pm 0.6^{\circ}\text{C}$. And temperature correction subroutine is 16200000. Only there is old apparatus and bad probe, we have to correct temperature. The corrected temp value is used under 99°C after the controller is in isotherm time 20mins. It is right correction method that 6 bits standard resistor corresponds with standard temperature. Moreover, three-core insulating line can't effect measured temperature within 50 meters.

Temperature ($^{\circ}\text{C}$)	PT100 resistor(Ω)
24	109.352
26	110.230
28	110.904
30	111.670
40	115.540
50	119.400
60	123.240
70	127.070
80	130.890
90	134.700
100	138.540
110	142.290
120	146.060
130	149.820
140	153.580
148	156.570
150	157.310

Start controller to pre-heat for 3mins. Then calibrate low point 50°C and high point 130°C. Primarily calibrate this two points and then others. Temperature deflection of each point is less than 0.6°C.



KG55B Back Panel diagram 2

7.0 Method of Temperature Calibration

Replace PT100 with 6 bits standard resistor.

Temperature (°C)	PT100 resistor(Ω)
10	103.900
20	107.790
22	108.576

4.0 Operation Attention

- (1) The last bit flashes in isotherm phase, not flashing in up-gradient temperature phase. It is to identify if setting temperature is equal with real temperature or not.
- (2) It is easy to start at any process No.(F) & step No.(L).
- (3) Handle abnormal situation: If abnormal situation happens in operation, cut off power for 5secs before the controller runs again or press **RST**.
- (4) Operation of keys should be on for one second to avoid error.
- (5) When programming, set temperature had better to be integer(set zeroes after decimal point).
- (6) In running state push **STOP** to only display temperature of dyeing tank.
- (7) If correcting process parameters, needn't shift last place to press "△" to page up.
- (8) We provide customers with general software without temperature correction. If customers have special order, we can give you temperature correction software.

5.0 Explanation of Programming

i.e. process No. **F2**, step No. **L0**.

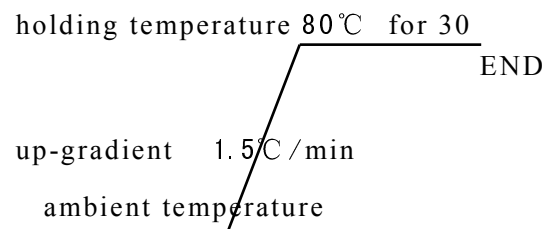
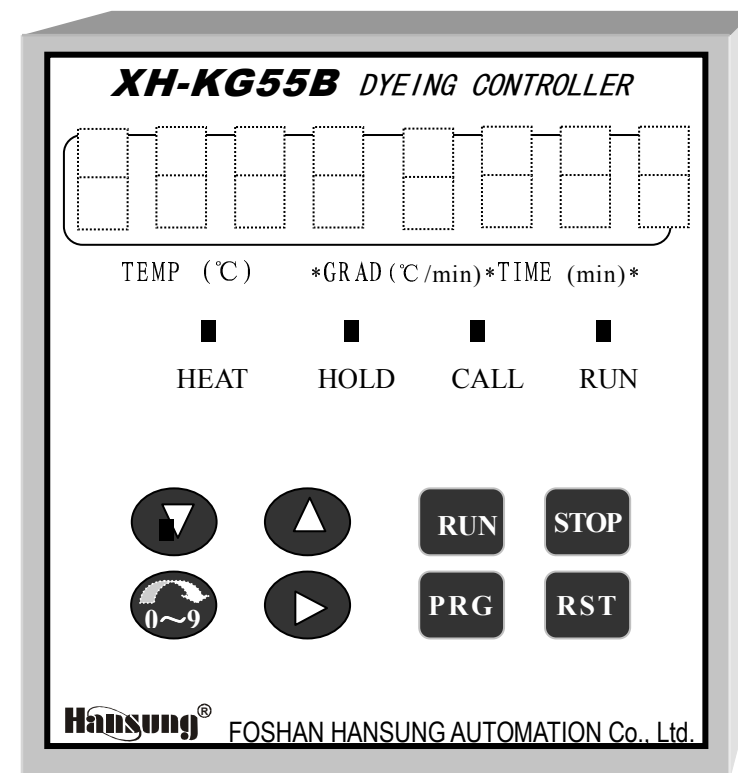


Diagram of Programming

No	action	setting temp (°C)	grad (°C/min)	isotherm time (min)	Process No.F* Step No L*
1	press RST	P			
2	press PRG	F0L0			enter F*L*
3	press 0~9	F2L0			enter F2
4	press Δ	000.0	0.0	00	enter data
5	set parameters	080.0	1.5	30	F2L1
6	press Δ	000.0	0.0	00	enter data
7	set end program	000.0	0.0	00	F2L2, set 0
8	press RST	P			end

6.0 Diagram of KG55B Output Connection



KG55B Front Panel

Diagram 1